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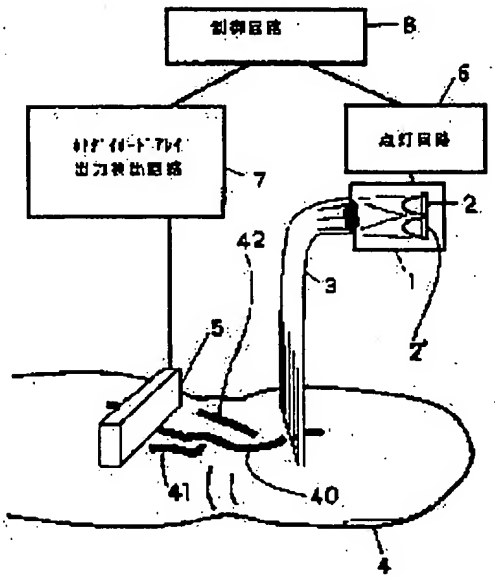
(54) BLOOD COMPONENT MEASURING DEVICE, AND METHOD

(57)Abstract:

PROBLEM TO BE SOLVED: To realize a device which non-invasively measures components of blood, especially the blood sugar component, at a favorable precision.

SOLUTION: A near infrared beam is made to enter a blood vessel on the bending internal side of a finger joint where blood vessels are concentrated in the vicinity of a cuticle, and the beam which disperses and passes in the blood in the blood vessel is detected, and its absorption by glucose is detected, and in the meantime, by using a beam of a wavelength without absorption of glucose, the dispersed and passed beam in the blood is measured in the same manner, and the glucose concentration is measured by the comparison of both beams. Light of light sources 2, 2' is made to enter an optical fiber 3, and the emitting side of the optical fiber 3 is linearly arranged, and is joined to the skin in a manner to go across the blood vessel of the finger, and the light is made to enter linearly, and the light which has dispersed and passed in the organism is received by a photo-sensor array 5, and among elements of respective arrays, an output wherein the dispersing light path in the blood vessel is long, i.e., the absorption of glucose is largest is used, and the output is compared corresponding to the light from the light sources 2, 2', and thus, a measurement of a favorable precision is realized without strictly performing the localizations for the light radiation and the light detection.



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(54)【発明の名称】　血液成分計測装置及び方法

(57)【要約】

【課題】　血液の成分、特に血糖成分を非侵襲に精度良く計測する装置の実現。

【解決手段】　近赤外光を血管が表皮付近に集中する指関節の曲げの内側の血管に入射させ、血管内の血液中を拡散透過する光を検出し、そのグルコースによる吸収を検出し、他方、グルコースの吸収の無い波長の光を用いて、同様にして血液中の拡散透過光を測定し、両者の比よりグルコース濃度を測定するものであり、光ファイバ３に光源２，２'の光を入射させ、光ファイバ３の出射側を直線状に配置し、指の血管を横切るように皮膚に密着させて線状に光を入射させ、生体中を拡散透過した光をホトセンサアレイ５で受光し、各アレイの素子の内、血管中の拡散光路の長いすなわち最もグルコースの吸収の大きい出力を用い、光源２、２'からの光に対応して比較することで、光照射、光検出の位置合わせを厳密に行うことなく精度よい測定を実現する。